

CLAIMS

1. An electrically heated window glass, comprising :
two glass panels laminated to each other ;
a plurality of heaters sandwiched between the two glass panels for heating
5 the glass panels, the heaters being positioned in such a manner that the heaters
divide the surface of the laminated glass panels into plural parts ;
a plurality bus bars each provided at the end portions of each of the
plurality of heaters for feeding thereto ; and
a changeover means for switching the connection between selected one of
10 the plurality of bus bars and a DC power supply to heat the plurality of heaters in
a series connected manner or parallel connected manner.
2. An electrically heated window glass according to claim 1, wherein
the plurality of heaters are heated in a parallel connected manner for the case of
15 removing at least ice and frost adhered on the outside surface of the laminated
glass panels, or the plurality of heaters are heated in a series connected manner
for the case of removing fog on the inside surface of the laminated two glass
panels, by switching the operation of the changeover means.
- 20 3. An electrically heated window glass according to claim 2, further
comprising a current detecting circuit for separately detecting a current through
each of the plurality of bus bars to obtain a condition representing no breakage of
the laminated two glass panels from resistances between bus bars based on
detected current values to sense an excessive heating of the laminated glass
25 panels.
4. An electrically heated window glass according to claim 3, wherein
each of the plurality of bus bars comprises a heating function to allow peripheral
area of the laminated glass panels to be heated in addition to the heating of an
30 inner area of the laminated glass panels.
5. An electrically heated window glass according to any one of claims
1-4, wherein

the plurality of heaters are two heaters positioned side by side in such a manner that the two heaters laterally divide the laminated glass panels into two parts, and

the plurality of bus bars, each consisting of an electrical conductive strip,
5 include a first and second bus bars provided at the lower edge of the two heaters, respectively, and a third bus bar provided at the upper edges of the two heaters and extended to the side of lower edge of one of the first and second bus bars along the side edge of one of the two heaters to connect the two heaters to each other.

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6. An electrically heated window glass according to claim 5, wherein the changeover means includes,

a relay for opening or closing between the first bus bar and the + terminal of the DC power supply,

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a pair of relays for connecting the second bus bar selectively to the + or – terminal of the DC power supply, the pair of relays operating oppositely to be opened or closed, and

a relay for opening or closing between the third bus bar and the – terminal of the DC power supply.

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7. An electrically heated window glass according to any of claims 1-4, wherein the laminated glass panels is a windshield of a vehicle.

8. An electrically heated window glass according to claim 5, wherein
25 the laminated glass panels is a windshield of a vehicle.

9. An electrically heated window glass according to claim 6, wherein the laminated glass panels is a windshield of a vehicle.